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On the influence of covalence on paramagnetic spin-lattice relaxation

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Abstract

The paramagnetic spin-lattice relaxation times of an isolated Ir4+ ion inserted in the crystalline lattice (NH4)2PtCl6 are computed. The computation is carried out for a Van Vleck relaxation mechanism taking account of the possibility of the formation of molecular orbits. It is shown that the effect of covalence in this case can be taken into account effectively in terms of the modified quantities -r2 and -r4, the mean square and mean fourth power of the electron radius. The results of calculations agree better with experiment as compared to estimates obtained without using molecular orbitals. © 1973 Consultants Bureau.

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